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ABSTRACT

This study focused on verbal and nonverbal immediacy behaviors of teachers, the relationship between immediacy variables and cognitive learning, as well as homophily, interpersonal solidarity, and student attentiveness at the senior-high school level. Subjects, 87 female and 73 male senior-high school students enrolled in interpersonal communication classes at a midwestern senior high school, were administered a series of instruments during the next-to-last week of the spring term, 1989. Results indicated that: (1) no significant differences occurred between senior-high school groups in rating verbal and nonverbal immediacy behaviors; (2) significant differences occurred between genders in rating three of the verbal immediacy items, but no significant differences occurred between genders in rating nonverbal immediacy items; (3) the total verbal and nonverbal immediacy scores and a majority of verbal and nonverbal immediacy scores were significantly correlated with affective learning and perceptions of cognitive learning; and (4) significant differences occurred between immediacy behaviors and homophily, solidarity, attentiveness, and cognitive learning. (Eight tables of data are included; 20 references and the immediacy instrument are attached.) (Author/RS)

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An Investigation of Verbal and Nonverbal Teacher Immediacy Behaviors, Homophily, Interpersonal Solidarity, Student Attentiveness and Student Learning at the Senior High School Level

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An Investigation of Verbal and Nonverbal Teacher Immediacy Behaviors, Homophily, Interpersonal Solidarity, Student Attentiveness, and Student Learning at the Senior High School Level

Abstract

This study focused on verbal and nonverbal immediacy behaviors of teachers, the relationship between immediacy variables and cognitive learning, as well as homophily, interpersonal solidarity, and student attentiveness at the senior high school level. The results indicate that no significant differences occurred between senior high school groups in rating verbal and nonverbal immediacy behaviors. Significant differences occurred between genders in rating three of the verbal immediacy items, but no significant differences occurred between genders in rating nonverbal immediacy items. The results also revealed that the total verbal and nonverbal immediacy scores and a majority of verbal and nonverbal immediacy were significantly correlated with affective learning and perceptions of cognitive learning. Significant differences also occurred between immediacy variables and homophily, solidarity, attentiveness and cognitive learning. These, as well as other results, are discussed in this paper.

Each academic year teachers at various educational levels and from various course areas are evaluated by students. The items on the teacher evaluation questionnaires are designed to measure the affect dimensions of teaching, including attitude toward the classroom atmosphere, content of the course, exercises in the course, and nonverbal and verbal behaviors of the instructor. Implicit in the evaluation forms is that they can measure what constitutes good teaching. Past research by Brim (1958), Getzels and Jackson (1963), and Cyphert (1972) has concluded that investigators know relatively little more today about what constitutes good teaching than they did at the beginning of the twentieth century.

Heath and Neilson (1974) completed a comprehensive review of previous research on the relationship between teacher behaviors and student achievements. The review revealed that past investigators have failed to develop consistent operational definitions of what constitutes good teaching, to develop an empirical basis for the perceptions of teacher-training objectives, to develop rigorous research designs, and to develop clear definitions of learning outcomes. In short, there has been a lack of replication of previous research studies, and many of the literature conclusions derived from one study at one educational level are indiscriminately cited as applicable to different levels of education.

Other reasearch by Travers (1962), Cronbach (1963), and DeCecco (1968), suggested systematic investigations of affect, behavioral, and cognitive

learning domains as a method to understand the teaching evaluation construct. Bloom (1968) conceptualized learning as (1) affect domain (development of a favorable or unfavorable attitudes toward learning), (2) behavioral domain (behaviors that are called for or implied by cognitive knowledge), and (3) cognitive domain (attention, perception, comprehension, and retention of knowledge).

Andersen (1978, 1979) defined a good teacher as one who produces positive outcomes in the affect, behavioral, and cognitive domains which are termed teaching effectiveness variables. She indicated that positive student affect is essential to enhance the learning process and suggested that more comprehensive studies need to be conducted to better understand the teaching effectiveness construct. Andersen also indicated that positive affect evolves from positive interpersonal relationships and designed a study to discover the relationship between nonverbal teacher immediacy and student learning in college classes. Andersen stated, " The more immediate a person is, the more likely he/she is to communicate at a close distance, smile, engage in eye contact, use direct body orientation, use overall body movement and gestures, touch others, relax, and be vocally expressive." The results of this comprehensive study were that nonverbal immediacy predicted 46 percent of the variance in the student's affect toward the instructor, 20 percent of the variance in the student's affect toward the

content, and 18 percent of the variance in the student's behavioral commitment. Andersen's research was a pioneer effort to determine the role of nonverbal immediacy in evaluating teaching effectiveness. McDowell, McDowell, and Hyerdahl (1980) replicated Andersen's study with similar results at the junior high and senior high levels. In addition, Richmond, Gorham, and McCroskey (1986) concluded that a significant relationship exists between nonverbal teacher immediacy and cognitive learning at the college level.

Limited research has been completed to determine the relationship between verbal immediacy and cognitive learning. Gorham (1988) indicated that the contribution of the teacher's verbal behavior to learning has been explored in terms of power relationships. Studies by Richmond, McCroskey, Kearney, and Plax (1985) and by Plax, Kearney, McCroskey, and Richmond (1986) revealed that the use of prosocial messages increased students' perceptions of teacher immediacy. Kearney, Plax and Wendt-Wasco (1984) concluded that teacher nonverbal immediacy is critical for student affective learning outcomes. Gorham (1988) developed an instrument to measure verbal and nonverbal immediacy. Her study was designed to answer two research questions:

1. To what extent are student perceptions of individual types of verbal immediacy behaviors associated with learning?
2. To what extent are student perceptions of teacher verbal immediacy

behaviors collectively associated with learning?

The results of her study indicated that students' perceptions of teacher immediacy are influenced by both verbal and nonverbal behaviors, and that these behaviors contribute significantly to learning.

This study is designed to replicate Gorham's study at the senior high level. In addition, exploratory research was completed to determine the relationships between immediacy variables and homophily, between immediacy variables and interpersonal solidarity, and between immediacy variables and attentiveness. Gender and senior high school grade level used as independent variables.

RESEARCH QUESTIONS

The following research questions were generated:

1. To what extent are students' perceptions of individual types of verbal teacher immediacy and nonverbal teacher immediacy associated with learning?
2. To what extent are students' perceptions of teachers' verbal immediacy behaviors and noverbal immediacy collectively associated with learning?
3. Will there be significant differences between gender groups and class groups in rating each verbal immediacy item and each nonverbal immediacy item?

4. Will there be significant differences between gender groups and class groups in composite verbal immediacy scores and composite nonverbal immediacy scores?

5. Will there be significant differences between gender groups and class groups in composite homophily, interpersonal solidarity scores, and attentiveness scores?

6. What are the relationships among verbal immediacy scores, nonverbal immediacy scores, homophily scores, interpersonal solidarity scores, and attentiveness scores?

PROCEDURES

The sample consisted of 160 senior high school students (87 females and 73 males). Students who completed the questionnaire were enrolled in interpersonal communication classes at a midwestern senior high school. Students were administered a series of instruments during the next to last week of the spring term, 1989.

Instruments

The questionnaire consisted of Gorham's Verbal and Nonverbal Immediacy items, cognitive learning scales, homophily scales, interpersonal solidarity scales, and attentiveness scales. The immediacy instrument is included at the end of the paper.

Immediacy

Gorham (1988) developed the immediacy scale. Forty-seven advanced undergraduate students generated a list of behaviors which characterized the best teachers they have had. Nonverbal behaviors were based on previous reseach by Richmond, Gorham, and McCroskey (1986). The final instrument consisted of 20 verbal items and 14 nonverbal items. Next, 387 college students rated the frequency from 0 (never) to 4 (very often) that the teacher used the behavior. Based on factor analysis all verbal items loaded on the first factor. All nonverbal items also loaded on the first factor. The total verbal immediacy score was calculated by adding all verbal items. Likewise, the total nonverbal immediacy score was calculated by adding all nonverbal items. In this study students rated the scales from 1 to 5, 1 - never to 5 - very frequently.

Cognitive Learning

Cognitive learning was based on the students' perceptions of their learning. That is, according to previous research (Richmond, et. al, 1985, 198) students were asked to respond to two questions related to learning; "On a scale of 0 to 9 how much did you learn in this class (0 means you learned nothing and 9 means you learned more than in any other class that you had)?" and (on the same scale) "How much do you think you could have learned in the class if you had the ideal instructor?" To determine the learning loss score the response to the first question was subtracted from the

second question.

Affective Learning

Affective learning instruments developed by McCroskey, Richmond, Plax and Kearney (1985) were used to measure attitudes toward course, behaviors recommended, and course content using four seven-step bi-polar scales: good/bad, worthless/valuable, fair/ unfair, and positive/negative. Behavioral intentions in terms of likelihood of actually attempting to engage in the behaviors recommended in the course, in terms of likelihood of actually enrolling in another course, and in terms of the likelihood of taking another course with the same instructor if choice and schedule permitted also were measured by four, seven-point bi-polar scales: likely/unlikely, impossible/possible, probable/improbable, and would/would not. All six scores were added to determine the overall affect score. Split-half reliability for the measure was .98. This is the same instrument used by Gorham (1988) in her study on teacher's verbal immediacy behaviors and student learning.

Solidarity

Andersen's modified version of the Interpersonal Solidarity Instrument developed by Wheeless (1978) for interpersonal communication was altered to make it more appropriate for an instructional setting. Through factor analysis the unidimensional 20-item measure of interpersonal

solidarity has a reliability of .96.

Homophily

A measure of perceived homophily was developed by McCroskey, Richmond and Daly (1975). Factor analysis was used to determine the dimensions of the homophily construct. The instrument is used as an exploratory variable in this study to determine if perceived similarity of self and teacher correlates with other variables.

Attentiveness

Norton and Pettegrew (1979) published the results of their development of the attentiveness instrument. They completed a factor analysis of the thirty item test. The results indicated that the attentiveness construct is multidimensional. Factor II, labeled attentiveness signals, accounted for 10.7 percent of the variance. In this study, nonverbal attentiveness items are used to determine if a positive correlation exists between the perceived immediacy levels of teachers and students' perceived nonverbal attentiveness level.

Statistical Analysis

Pearson correlations, analysis of variance, and multiple correlations were completed on the data. In addition, the item by item means are reported for the immediacy variables. Post hoc analyses were completed to determine if subjects with high verbal immediacy scores rated solidarity, homophily, and

attentiveness variables higher than subjects with low or average scores. Subjects were placed into high, medium, and low verbal immediacy groups based on their mean scores. That is, subjects scoring one standard deviation above the mean were classified in the high verbal immediacy group, and subject scoring one standard deviation below the mean were classified in the low verbal immediacy group, while subject whose scores were between one standard deviation above and below the mean are classified in the medium group. This same procedure was used to create high, average, and low nonverbal groups. Stepwise discriminant analyses were completed to determine differences among immediacy groups on the dependent measures. This statistical procedure maximizes differences between groups on variables included as predictors. Initially, the best discriminating variable is selected. Next, the second variable is selected from the remaining variables using criteria that would improve the multivariate F in combination with the first. This same procedure is continued until all significant variables are selected.

RESULTS

The results are reported in Tables 1 through 8. Table 1 and 2 indicate that no significant differences occurred between senior high school groups in rating the verbal immediacy items and nonverbal immediacy items. Significant differences ($p < .05$) occurred between genders in rating three of

the verbal immediacy items, but no significant differences occurred between genders in rating nonverbal immediacy items.

The results, reported in Tables 3 through 6, indicate that significant differences occurred among groups. That is, students who indicated that they learned much on a scale of 0 to 9 in the language arts class rated the verbal immediacy items significantly higher than students who rated how much they learned lower. Significant differences ($p > .01$) also occurred among groups in rating the ideal nonverbal immediacy scale.

The results, reported in Table 7 and 8, reveal that the the total verbal and nonverbal immediacy scores and a majority of verbal and nonverbal immediacy items were significantly correlated with affective learning and perceptions of cognitive learning. Significant differences ($p < .01$) also occurred between immediacy variables and homophily, solidarity, attentiveness and cognitive learning.

DISCUSSION

An interpretation of the results of this study indicates that students rated language arts teachers highest on the following verbal items:

1. Uses personal examples or talks about experiences she/he has had outside the classroom.
2. Addresses students by name

3. Addresses me by name

4. Has initiated conversations with me before, after and outside the classroom.

These results appear to support in part the results of Gorham's study. That is, students' perceptions of teacher immediacy are influenced by verbal and nonverbal behaviors and these behaviors contribute to learning. Unlike the results of Gorham's study, humor in class and discussion on topics initiated by students are not rated as frequently occurring in the high school classroom.

Significant gender differences also occurred. In each case females rated the items significantly higher. This seems to indicate that female high school students perceive more interpersonal communication between teacher and student. These results might be because a majortity of language arts teachers are females. Future research might use the gender of teachers as an independent measure. If this were done results similar to those of Gorham might occur. For example, female instructors might provide more feedback, ask how students feel about an assignment, due date, or discussion topic, ask questions that solicit opinions and viewpoints, and praise students. Female instructors might also touch students and smile.

No significant differences occurred in rating nonverbal immediacy items. The mean results, however, indicate that eye contact, gestures, and vocal variety are used most frequently by language arts teachers. These results

are similar to those reported by Gorham (1988) and Richmond, Gorham, and McCroskey (1986).

Stepwise discriminant analysis was completed to determine differences among verbal immediacy groups in rating affective learning-attitude, affective learning-behavioral intention, overall affect, homophily, attentiveness, interpersonal solidarity, and actual cognitive learning scale. The discriminant analysis indicated that 74 percent of the subjects were correctly classified. Significant differences occurred among groups in rating all dependent measures. The Scheffe procedure indicated significant differences ($p < .01$) occurred between high and low and medium and low groups on all dependent measures. No significant differences occurred between high and medium groups on dependent measures. This same procedure was completed for the nonverbal immedacy groups. The discriminant analysis indicated that 79 percent of the participants were correctly classified.

These results reveal that subjects from the high verbal immediacy and high nonverbal immediacy groups rated the affective learning variables significantly higher than subjects from the low group. That is, the high and medium immediacy groups have a more positive attitude toward the course content, behaviors recommended, and course instructor than the low immediacy groups. These groups also are more likely to engage in the

behaviors recommended in the course, are more likely to enroll in another course of related content, and are more likely to take another course from the instructor than the low immediacy groups.

Likewise, subjects from the high and medium immediacy groups rated homophily, interpersonal solidarity, and attentiveness higher than the low immediacy group. That is, subjects from the high and medium groups feel they are more like their teacher, develop closer interpersonal relationships, and are more attentive toward their teacher.

A 3 by 3 analysis of variance was completed to determine if there were interaction effects for any of the dependent measures. No significant interactions occurred.

The results of the study point out for the most part that immediacy are related to affect, behavioral, and cognitive learning. Immediacy variables are related to homophily, interpersonal solidarity, and attentiveness. These findings, along with the findings of Andersen, (1979) McDowell, McDowell and Hyerdahl (1980), and Gorham (1988), demonstrate that immediacy is a salient variable in understanding students' perceptions of teaching effectiveness. Research should be continued in this area. Numerous questions could be generated in an attempt to better understand verbal and nonverbal immediacy construct in terms of students' perceptions at various educational levels and for various subject areas. Some examples are:

1. Do students at different educational levels have different perceptions

of what constitutes good immediacy cues?

2. Do students at various educational levels give different attentiveness nonverbal cues? For example, self report tests on nonverbal cues could be completed by students in elementary school and compared with junior high students, senior high students and college students?

3. Do students have certain expectations of immediacy cues for teachers who teach different subjects? For example, is the science teacher expected to be as immediate as the language arts teacher?

4. Do students expect male teachers to have a different set of immediacy cues than female teachers?

5. Do male and female students have different expectations about nonverbal cues from male and female teachers?

6. Do students enrolled in P-type courses rate instructors higher on verbal and nonverbal immediacy behaviors than students enrolled in T-Type courses?

An attempt also could be made to determine if students with different personality types rate teachers differently on immediacy variables. For example, if the Bem Sex-Role inventory was completed by students, comparisons could be made among androgynous, masculine, feminine, and

undifferentiated students to determine how each group rates the teacher on verbal and nonverbal immediacy variables.

In addition, there is a need to discover how communication apprehension, willingness to communicate, intelligence, etc., relate to immediacy. In short, a need exists to continue research on the immediacy construct, developing new learning theories, and utilizing multivariate statistics to increase understanding of the construct.

Table 1
Verbal Immediacy

Means and ANOVA Results for Gender and Class Groups

Items	X	Gender	Class
1. Uses personal examples or talks about experiences she/he has had outside of class.	4.4		
2. Ask questions or encourages students to talk.	3.8		
3. Get into discussions based on something a student brings up even when this doesn't seem to be a part of his/her lecture plan.	3.3		
4. Uses humor in class	3.7		
5. Addresses students by name	4.6		
6. Addresses me by name	4.6		
7. Gets into conversation with individual students before or after class.	3.7		
8. Has initiated conversations with me before, after or outside of class	4.6	.03	
9. Refers to class as "our" class.	3.5	.01	
10. Provides feedback on my individual work.	3.8		
11. Ask how student's feel about an assignment.	2.6		
12. Invites students to meet with him/her before or after school if they have questions or want to discuss something.	4.0		
13. Ask questions that ask for student opinion.	3.5	.01	

14. Praises students' work, actions or comments.	3.5	
15. Will have discussions about things unrelated to class with individual students or with the class as a whole.	3.2	.02

Table 2
Nonverbal Immediacy

Means and ANOVA Results for Gender and Class Groups

Items	X	Gender	Class
1. Gestures while talking in class.	4.4		
2. Looks at class while talking.	4.7		
3. Smiles at the class as a whole, not just individual students.	4.2		
4. Touches students in class.	3.0		
5. Moves around in class while teaching.	3.9		
6. Has a really relaxed body position while talking to the class.	4.2		
7. Smiles at individual students in the class.	4.1		
8. Uses a variety of vocal expressions while talking to the class.	4.3		
9. I would recommend that a friend of mine take a course from this instructor.	3.6		
10. I would take another course from this instructor.	3.6		

Table 3
One-Way Analysis of Variance
On Composite Verbal Immediacy Scores In Rating
Students Language Arts Teacher

Source	df	Sums of Squares	Mean Squares	F	P
Between groups	6	1177.4	196.23	4.09	.001
Within groups	148	4169.1	47.9		
Total	154	5346.5			

Specifically on a scale of 0-9, how much did you learn in this language arts class (0 means you learned nothing and 9 means that you learned more than in any other class you've had.

Table 4
Scheffe F-Tests Between Groups
On Composite Verbal score
for Present Language Arts Teacher

Groups	P
Gl vs G3	.05
G1 vs G4	.05
G1 vs G5	.05
G1 vs G7	.05
G2 vs G3	.05
G2 vs G5	.05
G2 vs G6	.05

Table 5
One-Way Analysis of Variance
On Composite Nonverbal Immediacy Scores In Rating
Students Language Arts Teacher

Source	df	Sums of Squares	Mean Squares	F	P
Between groups	6	966.32	161.1	4.57	.0004
Within groups	148	3067.8	35.3		
Total	154	4034.1			

Specifically on a scale of 0-9, how much do you think you could have learned in this language arts class if you had the ideal instructor? 0 means you learned nothing and 9 means that you learned more than in any other class you've had.

Table 6
Scheffe F-Tests Between Groups
On Composite Verbal score
for Ideal Language Arts Teacher

Groups	P
G1 vs G7	.05
G2 vs G7	.05
G3 vs G7	.05

Table 7

Simple Correlations of Verbal and Nonverbal Immediacy Items and Learning measures

	Learning	Learning Loss	Learning Variable Attitude	Behavioral Items	Total Affect
Verbal Total	.42*	-.41*	.54*	.52*	.54*
Verbal items					
1	.24	-.34*	.38*	.46*	.48*
2	.27	-.38*	.40*	.39*	.40*
3	.34*	-. 42*	.41*	.42*	.44*
4	.42*	-.19	.34*	.31*	.34*
6	.35*	-.27	.28	.23	.35*
7	.32*	-.29	.26	.29	.32*
8	.42*	-.45*	.37*	.39*	.42*
9	.47*	-.49*	.45*	.42*	.47*
10	.33*	-.24	.31*	.32*	.33*
11	.16	-.19	.21	.20	.21
12	.37*	-.34*	.38*	.39*	.39*
13	.43*	-.41*	.37*	.36*	.36*
14	.46*	-.42*	.45*	.49*	.49*
15	.24	-.27	.23	.26	.26
Nonverbal Totals	.47*	-.58*	.62*	.60*	.63*
Nonverbal Items					
1	.14	-.19	.16	.08	.13
2	.43*	-.38*	.45*	.49*	.49*
3	.47*	-.43*	.46*	.42*	.44*
4	.23	-.19	.33*	.37*	.37*
5	.29	-.27	.34*	.32*	.34*
6	.41*	-.39*	.45*	.43*	.45*
7	.49*	-.43*	.47*	.43*	.47*
8	.34*	-.35*	.36*	.33*	.36*
9	.34*	-.36*	.38*	.39*	.39*
10	.38*	-.44*	.47*	.48*	.48*

p < .01

Table 8

Correlation Coefficients Between Teacher Immediacy and Student Immediacy Variables

Variables	HVI	HOM	SOL	ATT	COG
VI	.62[x]	.54[x]	.57[x]	.61[x]	.39[x]
NVI		.59[x]	.63[x]	.69[x]	.51[x]
HOM			.52[x]	.64[x]	.43[x]
SOL				.62[x]	.32[x]
ATT					.41[x]
COG					

p< .61

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Appendix A

DIRECTIONS Please rate your language arts instructor's communication behavior by indicating your level of frequency with each of the following items: 1 = never, 2 = once, 3 = occasionally, 4 = frequently, 5 = very frequently. Place a number between 1 and 5 in the space to the left of each item.

____ 1. Uses personal examples or talks about experiences she/he has had outside of class.
____ 2. Asks questions or encourages students to talk.
____ 3. Gets into discussions based on something a student brings up even when this doesn't seem to be part of his/her lecture plan.
____ 4. Uses humor in class.
____ 5. Addresses students by name.
____ 6. Addresses me by name.
____ 7. Gets into conversation with individual students before or after class.
____ 8. Has initiated conversations with me before, after or outside of class.
____ 9. Refers to class as "our" class.
____10. Provides feedback on my individual work.
____11. Asks how students feel about an assignment.
____12. Invites students to meet with him/her before or after school if they have questions or want to discuss something.
____13. Asks questions that ask for student opinions.
____14. Praises students' work, actions or comments.
____15. Will have discussions about things unrelated to class with individual students or with the class as a whole.
____16. Gestures while talking to class.
____17. Looks at class while talking.
____18. Smiles at the class as a whole, not just individual students.
____19. Touches students in class.
____20. Moves around in class while teaching.
____21. Has a very relaxed body position while talking to the class.
____22. Smiles at individual students in the class.
____23. Uses a variety of vocal expressions while talking to the class.
____24. I would recommend that a friend of mine take this course from this instructor.
____25. I would take another course from this instructor.

Now we would like you to rate how much you have learned in this class.

Specifically on a scale of 0-9, how much did you learn in this laguage arts class (0 means that you learned nothing and 9 means you learned more than in any other class you've had)? Select a number between 0 and 9 and place it in the space below.

_____

How much do you think you could have learned if you had the ideal instructor? Select a number between 0 and 9 and place it in the space below.

_____

Please check one of the following:

1. Sex

_____ Male
_____ Female

2. Grade Level

_____ 10th
_____ 11th
_____ 12th